

CLAIMS

WHAT IS CLAIMED IS:

1. An apparatus having dissipated static electric charge on a moving component thereof, said apparatus comprising:

a moving component upon which static electrical charges build during operation of said apparatus;

a static charge neutralizing assembly associated with said moving component, said neutralizing assembly including:

a conductive carrier strip; and

a plurality of electrically conductive filaments attached to said carrier strip, said filaments having diameters sufficiently small to induce ionization in the presence of an electrical field generated by static charges on said moving component, said filaments disposed on said carrier strip and extending beyond an edge of said carrier strip and having distal ends remote from said carrier strip; and

said apparatus disposed with respect to said component to hold said filaments with said distal tips adjacent but in spaced relation to said moving component, to thereby cause ionization between said filaments and said moving component.

2. The apparatus of claim 1, said moving component being a roll.

3. The apparatus of claim 2, said distal tips disposed in spaced relation to an outer surface of said roll.

4. The apparatus of claim 2, said roll having a shaft extending therethrough, and said apparatus having a mounting fixture attached to said shaft.

5. The apparatus of claim 4, said mounting fixture being disposed inside of said roll, and said distal tips of said filaments in spaced relation to an inside surface of said roll.

6. The apparatus of claim 4, said mounting fixture disposed adjacent an end of said roll, with said distal tips in spaced relation to said end of said roll.

7. The apparatus of claim 4, said mounting fixture at least partially surrounding said shaft.

8. The apparatus of claim 1, said moving component being slats of a conveyor.

9. The apparatus of claim 1, said moving component being a shaft.

10. The apparatus of claim 9, said shaft being a motor shaft.

11. The apparatus of claim 10, including first and second outer layers on opposite sides of said carrier strip, each said outer layer having a shoulder adjacent said carrier strip and having a portion thereof projecting beyond said edge of said carrier strip adjacent but spaced from said distal tips of said filaments.

12. The apparatus of claim 10, said carrier strip being annular in shape and surrounding said shaft, and said filaments extending inwardly beyond an inner edge of said annular carrier strip.

13. The apparatus of claim 12, said filaments arranged in bundles.

14. The apparatus of claim 12, including first and second annular outer layers on opposite sides of said carrier strip, each said outer layer having a shoulder adjacent said carrier strip and having a portion thereof projecting inwardly adjacent but spaced from said distal tips of said filaments.

15. The apparatus of claim 14, said filaments arranged in bundles projecting inwardly from said annular shaped carrier strip.

16. The apparatus of claim 1, said filaments arranged in bundles.

17. An electric motor comprising:  
a motor shaft rotated during operation of said motor and accumulating static charges thereon during said operation;  
a static charge neutralizing assembly associated with said shaft, said neutralizing assembly including:  
a conductive carrier strip;  
a plurality of electrically conductive filaments electrically connected to said conductive carrier strip, said filaments being sufficiently small to induce ionization in the presence of an electrical field from static charges on said shaft, said filaments projecting beyond an edge of said carrier strip and having distal tips disposed adjacent but in spaced relation to said shaft.

18. The motor of claim 17, said carrier strip being annular shaped and surrounding said shaft.

19. The motor of claim 18, said filaments arranged in bundles projecting inwardly from said annular shaped carrier strip.

20. The motor of claim 18, including first and second annular outer layers on opposite sides of said carrier strip, each said outer layer having a shoulder adjacent said carrier strip and having a portion thereof projecting inwardly beyond said edge of said carrier strip adjacent but spaced from said distal tips of said filaments.

21. The motor of claim 20, said filaments arranged in bundles projecting inwardly from said annular shaped carrier strip.

22. The motor of claim 17, said filaments arranged in bundles projecting inwardly from said carrier strip.

23. The motor of claim 17, including first and second outer layers on opposite sides of said carrier strip, each said outer layer having a shoulder adjacent said carrier strip and having a portion thereof projecting inwardly beyond said edge of said carrier strip adjacent but spaced from said distal tips of said filaments.

24. A method for neutralizing static charge on a moving component of an apparatus, said method comprising steps of:

providing an arrangement of filaments having diameters sufficiently small to induce ionization in the presence of an electrical field created by static charges on the component;

positioning distal ends of the filaments near but spaced from a surface of the component;

operating the apparatus including moving the surface of the component past the distal tips of the filaments adjacent thereto; and

inducing ionization from the static electric charge on the surface of the component along the filament distal tips.